

REMARKS

Claims 1 and 3-19 remain in this application, with Claims 1, 3, 17 and 18 amended, and Claim 2 canceled. Applicant respectfully requests reconsideration of the application in view of the foregoing amendments and following remarks.

Applicant acknowledges with appreciation the indication of allowable subject matter in Claims 17 and 18. Per the Examiner's suggestion, these claims have been rewritten into independent form including all limitations of the base claim and any intervening claims. These claims are now deemed to be in condition for allowance.

Before addressing the merits of the rejections based on prior art, Applicants provide the following brief description of the invention. The invention is directed to an RFID interrogator having a receiver/transmitter architecture that accounts for the variation in tolerances of radio system electrical components. The RFID interrogator includes a memory in which is stored desired initial condition data of the receiver/transmitter architecture, and this initial condition data is used upon initialization of the RFID interrogator to define the operational condition of the RFID interrogator. Each individual RFID interrogator may contain unique initial condition data corresponding to the particular component tolerances of that radio system.

By way of background, it is important that the RFID interrogator achieve an operational condition very quickly in order to minimize the transaction time associated with communicating with an RFID tag. Particularly, in an environment in which there may be numerous RFID tags that need to communicate with the RFID interrogator, reduction of the transaction time with each RFID tag is often a critical consideration. The initial condition data enables the RFID interrogator to quickly achieve the appropriate operational condition.

In an embodiment of the invention, an apparatus for interrogating an RFID tag comprises a radio adapted to communicate RF signals with the RFID tag. The radio includes a receiver portion and a transmitter portion. A processor is operatively coupled

to the radio and provides control signals defining operational parameters of the radio. A memory is accessible by the processor and contains at least one data value used to set the operational parameters. The transmitter portion may further include an amplifier subsystem adapted to be operated in a saturated condition, and the stored data value defines an initial setting of the amplifier subsystem to achieve the saturated condition.

It should be appreciated that transmitters are not generally operated in a gain saturated condition. To the contrary, it is known to operate transmitters in the linear portion of the gain range in which the gain can be actively controlled to achieve level gain, such as using automatic gain control (AGC). A drawback of such systems is that it takes additional time for the conventional AGC systems to settle at a desired gain level. In the present invention, Applicants utilize the transmitter in a saturated condition because it represents a known state that can be achieved rapidly. In other words, Applicants trade off the ability to actively adjust gain in favor of rapid achievement of a known operational condition. Applicants have amended certain claims to clarify these aspects of the present invention.

The Examiner rejected Claims 1-16 and 19 under 35 U.S.C. § 102(e) as anticipated by Ovard et al. This rejection is respectfully traversed.

Ovard discloses a wireless communication system in which interrogators communicate with remote devices such as RFID transponders. Fig. 6 shows a first embodiment of the RF circuitry for the interrogator as including transmitter 90 and driver amplifier 92 adapted to provide a gain of approximately 10-15 dB (see col. 10, lines 48-56). Fig. 8 shows a second embodiment of the RF circuitry, automatic gain control circuitry includes a variable gain amplifier 130 and loop filter 136 (see col. 12, lines 16-43). Neither of these embodiments of Ovard suggest or disclose the desirability of operating the transmitter in a saturated gain condition, and instead teach conventional gain control in which the gain is operated in the linear portion of the gain range. Moreover, the reference does not include a memory containing stored data values defining an initial setting of the amplifier subsystem to achieve the saturated condition.

More particularly, Ovard fails to suggest or disclose, *inter alia*, "a radio adapted to communicate RF signals with said RFID tag, said radio including a receiver portion and a transmitter portion, *said transmitter portion having an amplifier subsystem adapted to be operated in a saturated gain state*; ...and a memory accessible by said processor and containing at least one data value used to set said operational parameters, *said at least one data value comprising an optimal setting of said amplifier subsystem selected to achieve said saturated gain state upon initialization of said radio*," as defined in Claim 1. Likewise, Ovard fails to suggest or disclose, *inter alia*, "determining a bias condition of said amplifier sufficient to achieve a saturated output power level for said amplifier; recording a value of at least one digital potentiometer of said processor corresponding to said determined bias condition; and generating said control signals using said recorded digital potentiometer value," as defined in Claim 12. This ground of rejection should therefore be withdrawn.

In view of the foregoing, the Applicant respectfully submits that Claims 1 and 3-19 are in condition for allowance. Reconsideration and withdrawal of the rejections is respectfully requested, and a timely Notice of Allowability is solicited. To the extent it would be helpful to placing this application in condition for allowance, the Applicant encourages the Examiner to contact the undersigned counsel and conduct a telephonic interview.

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Our check in the amount of \$200.00 is enclosed for the later presentation of one (1) independent claim(s) in excess of three, pursuant to 37 C.F.R. § 1.16(b). The Commissioner is authorized to charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 50-0639.

Respectfully submitted,



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